HOME OFFICE

CIVIL DEFENCE

THE ATOM BOMB ITS EFFECTS & HOW TO MEET THEM

PART 5

"EFFECTS ON PERSONNEL"

FILM STRIP C.D. 35

LECTURE NOTES

LONDON : HER MAJESTY'S STATIONERY OFFICE

1953

FILM STRIP CD 35

THE ATOM BOMB ITS EFFECTS AND HOW TO MEET THEM

PART V

EFFECT ON PERSONNEL

FRAME

1 In applying the effects of an air burst atomic bomb to the population of a British city, it is assumed firstly that there has been no warning prior to the attack, and then that a clear five minutes warning has been given.

2 For the first example consider a factory at a point ¼ mile from ground zero.

3 It is nearly time for the shift to change over and workers are hanging about outside.

4 Nearby is the administrative block of modern steel girder construction and at ground floor level one of the secretaries is standing near the window.

5 Suddenly, and without any warning, an atomic bomb bursts 1,000 feet in the air and about ¼ mile away. The people outside the factory are all killed, in theory they may have died three times.

6 First from heat flash their bodies will be charred.

7 Secondly they may have received a lethal dose of gamma rays.

8 Thirdly they may be crushed under the debris.

9 As the secretary is in an office on the far side of the block from the explosion she is shielded from the heat flash.

FRAME

21 He may be severely injured or indeed killed by flying glass and masonry.

22 People who had turned into the side street will have the protection of the buildings against heat and radiation.

23 But part of these same buildings falling on them may severely injure or kill them.

24 If a warning had been received all these people would have taken cover. Mr. Smith would look about him for a solidly built building like this store which is a framed building.

25 The people in the side street find a surface shelter handy and go into it.

26 Mr. Smith is now protected from the effects that might have killed him, namely heat, radiation and blast.

27 His greatest danger is however, from secondary blast causing the false ceilings and partition walls to collapse; there will be flying glass from the show cases, etc.

28 If Mr. Smith had had time to go to the basement he would almost certainly be unharmed.

29 People in the surface shelter are protected from Heat and Radiation and this time will survive the Blast effects. The shelter exits might be blocked. It is important to realise that at this distance rescue operations might be hampered by serious fires.

30 Mrs. Brown lives in a semi-detached house at a point $1\frac{1}{2}$ miles from ground zero.

31 Whilst Mrs. Brown is collecting the washing off the line the atom bomb explodes $1\frac{1}{2}$ miles away on the other side of the house.

FRAME

32 The house acts as a shield from heat flash and at this range the gamma rays will not cause injury. The effects of blast will be considerable and there is the danger of falling chimney pots and flying glass. Mrs. Brown will be very lucky if she escapes injury. Unless Mrs. Brown had taken the precaution of white washing her windows, there is a chance that the heat flash will have started a fire on the top floor front. Her injuries may prevent her from dealing with the fire quickly and her house might be gutted.

33 If Mrs. Brown had received a proper warning she would have gone to her Anderson Shelter, and at this range she would have been safe from all the effects.

34 She would have been able to re-enter her house and with assistance deal with any small fires.

35 As a final example Mr. Jones lives ½ mile further away a distance of two miles from ground zero.

36 Mr. Jones is about to leave home and is standing in the doorway looking at the sky.

37 Normally the brilliance of the heat flash would cause temporary blindness and would harm the exposed parts of the skin, but the industrial haze has reduced the brilliance and range of the flash, and he would probably only experience slight reddening of the skin.

38 Radiation at this range will be negligible, but there may be a very slight risk from fission products in the "Fall out" if he were down wind of the explosion.

39 The blast effect will break the windows of his house, but it is unlikely to cause him any personal injury.

40 If there had been a warning and he had taken shelter he would be safe from any risk of injury.

In all the cases considered the people who were not sufficiently protected were killed or injured by one or more of the atomic bomb's three effects. When these same people were assumed to have taken proper cover in shelters or basements, they stood a far better chance of not being killed by the effects of the bomb.

Conclusion As in the last war the immediate post raid problems are going to be those of rescue and fire fighting, only on a very much larger scale. There will be the added problem of access through areas blocked by debris. Although the atomic bomb causes immense damage, there is still a great deal that Civil Defence can do to save and protect life.

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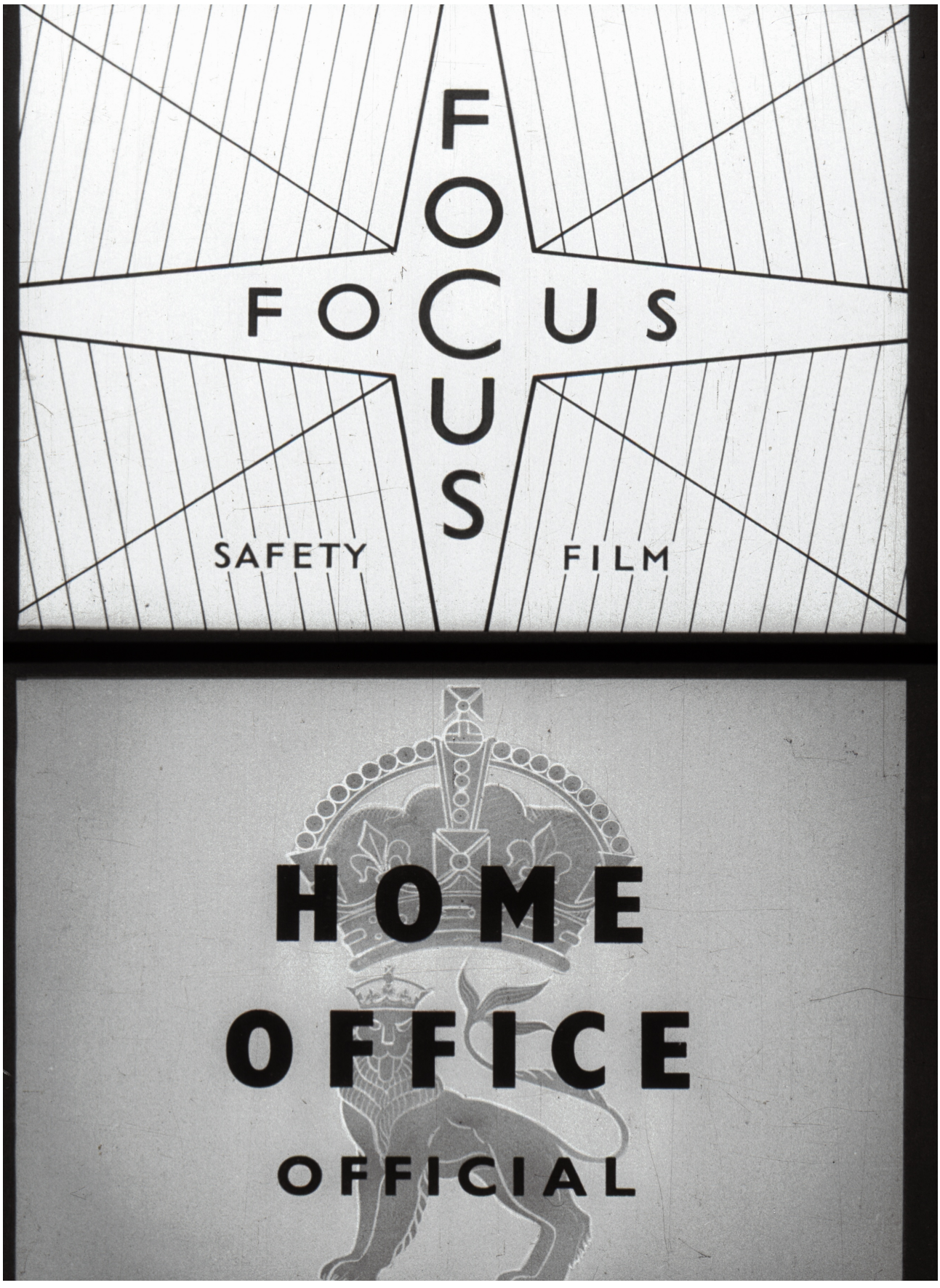
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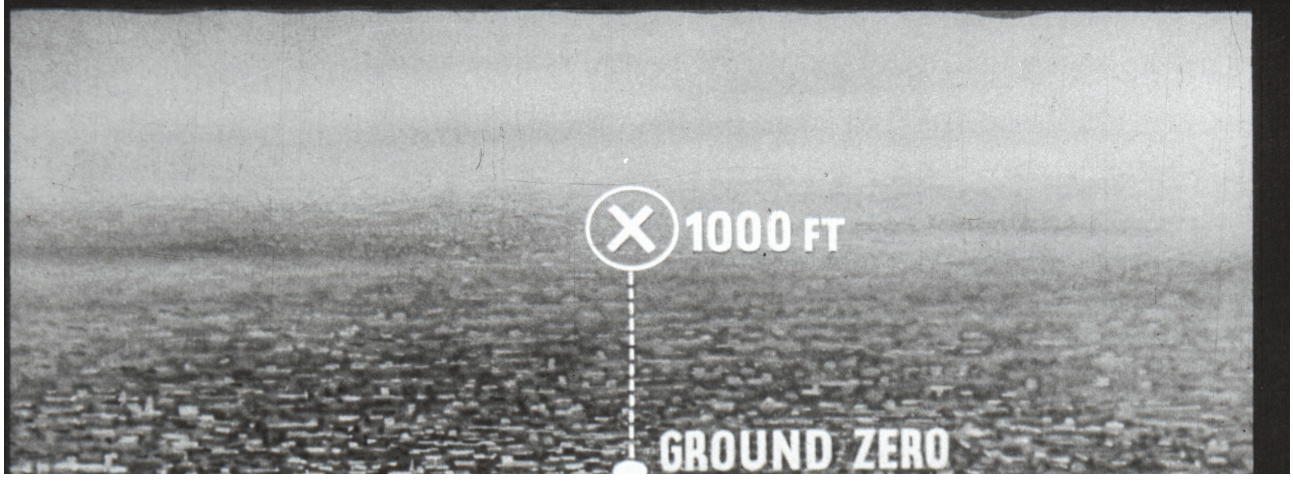
PART 5

EFFECTS ON PERSONNEL

March 1953

CD 35



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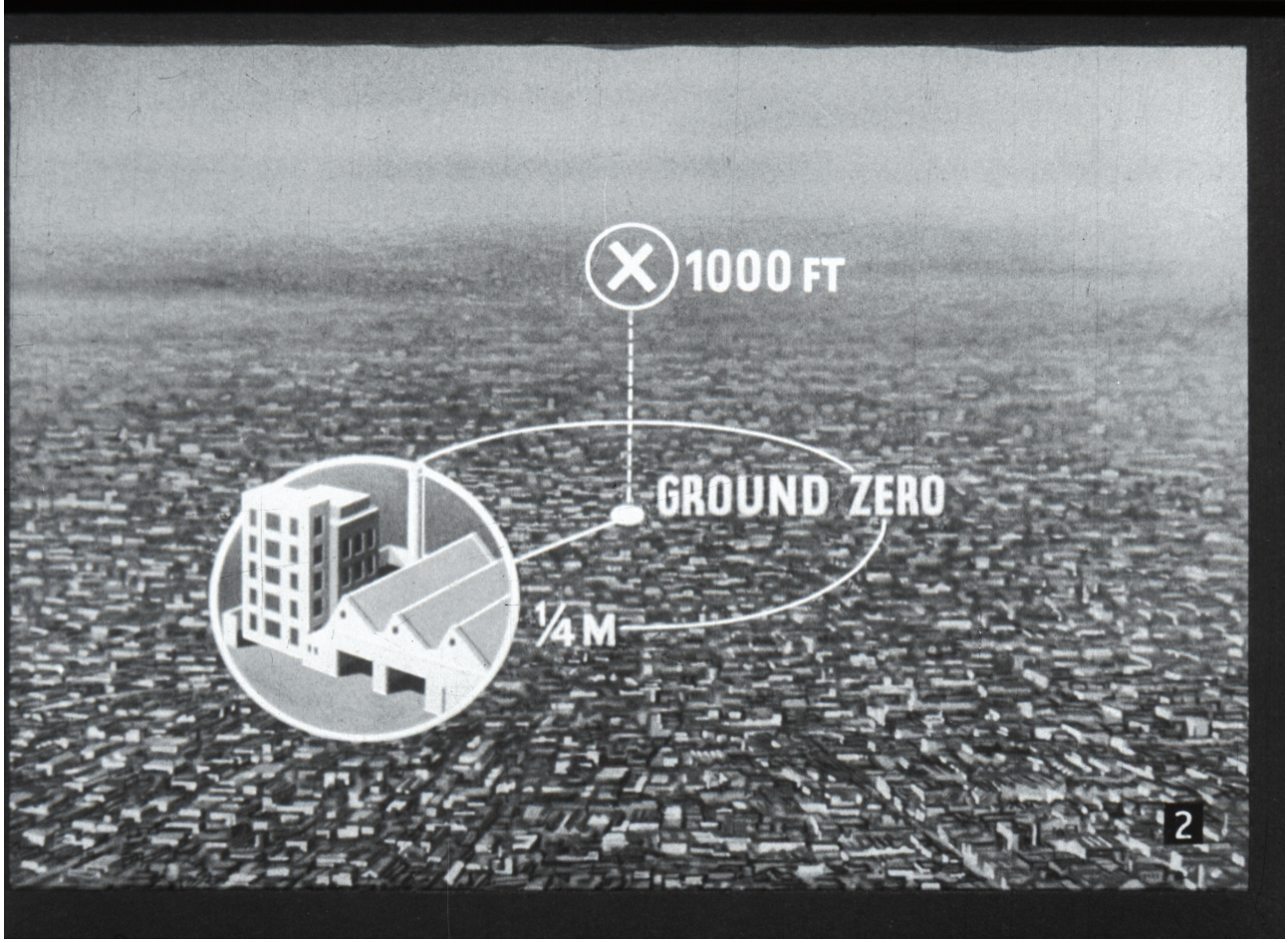
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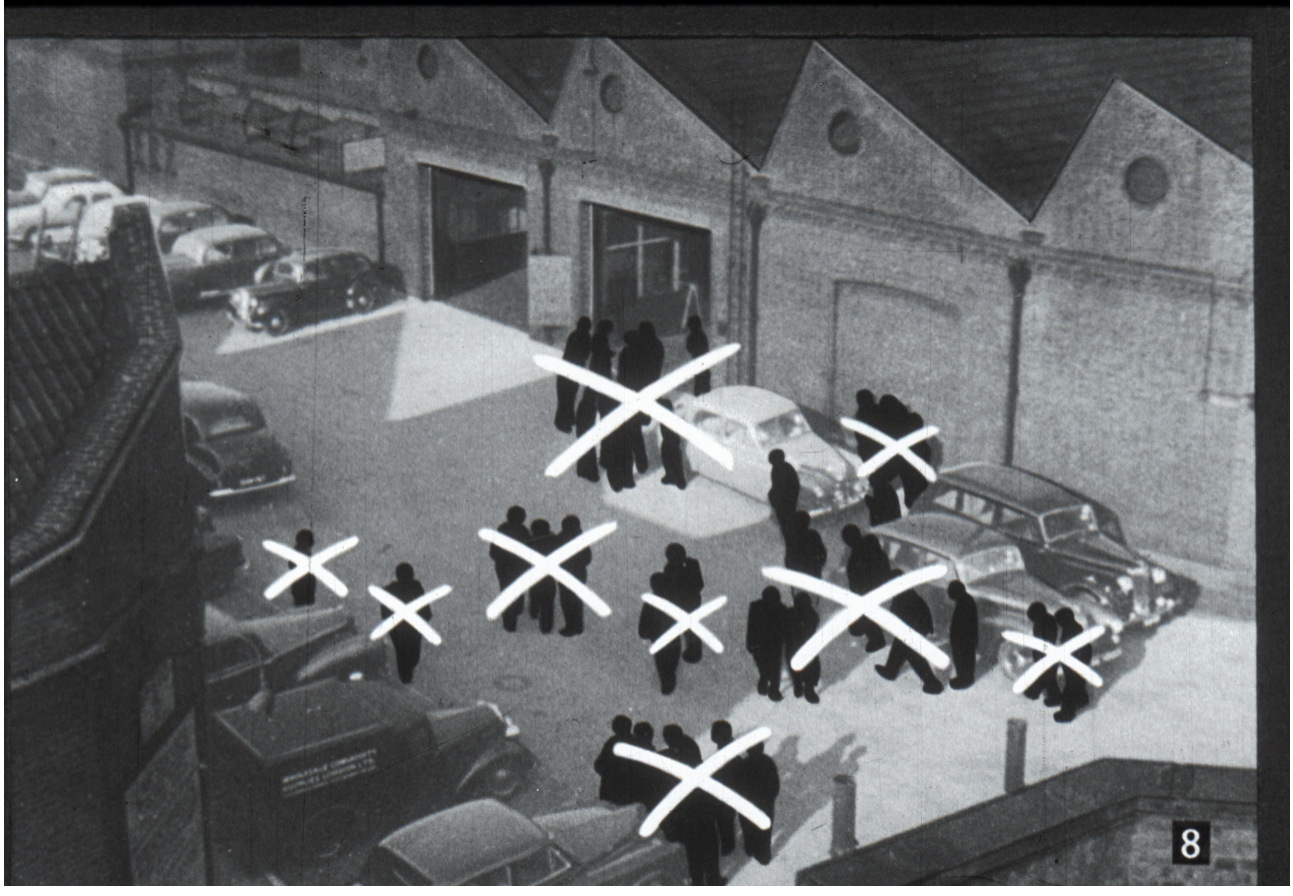
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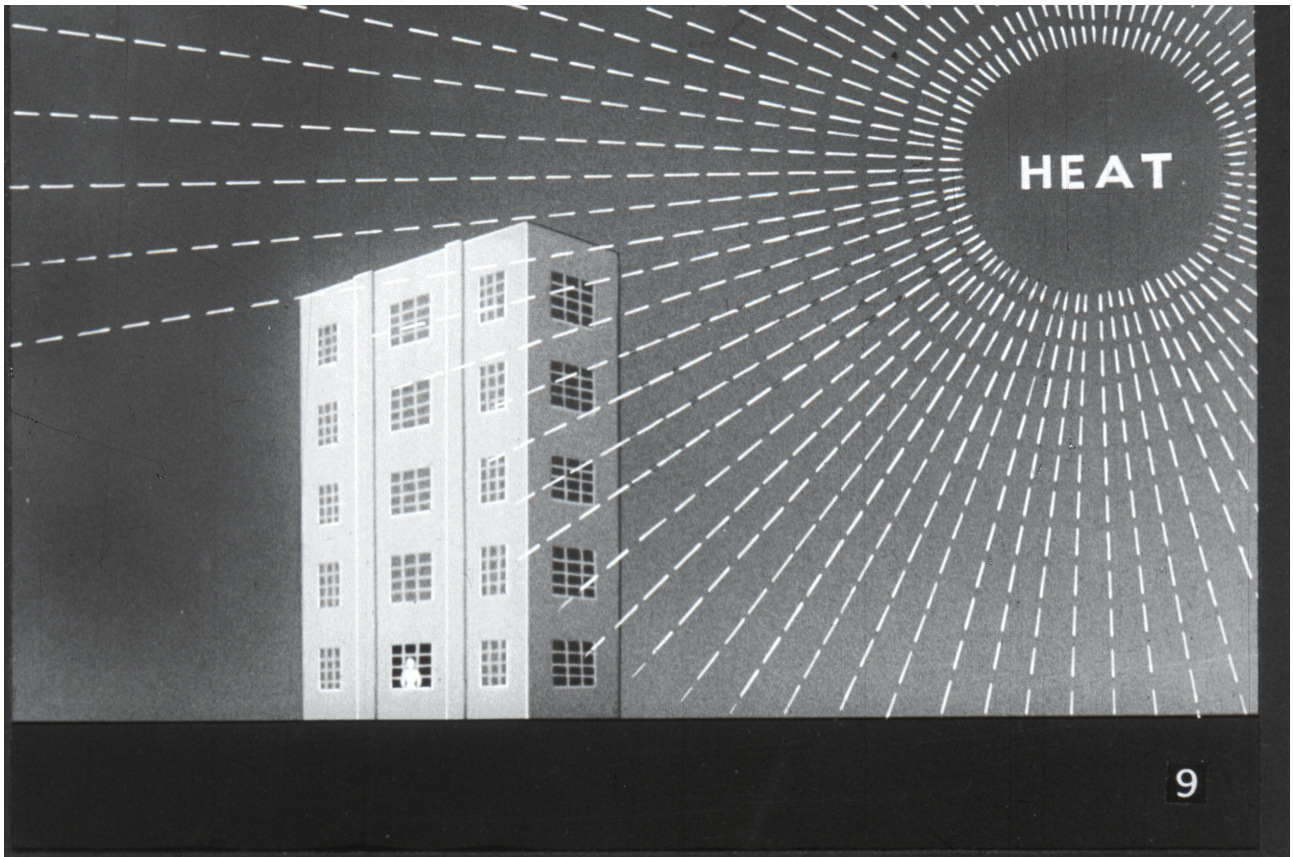

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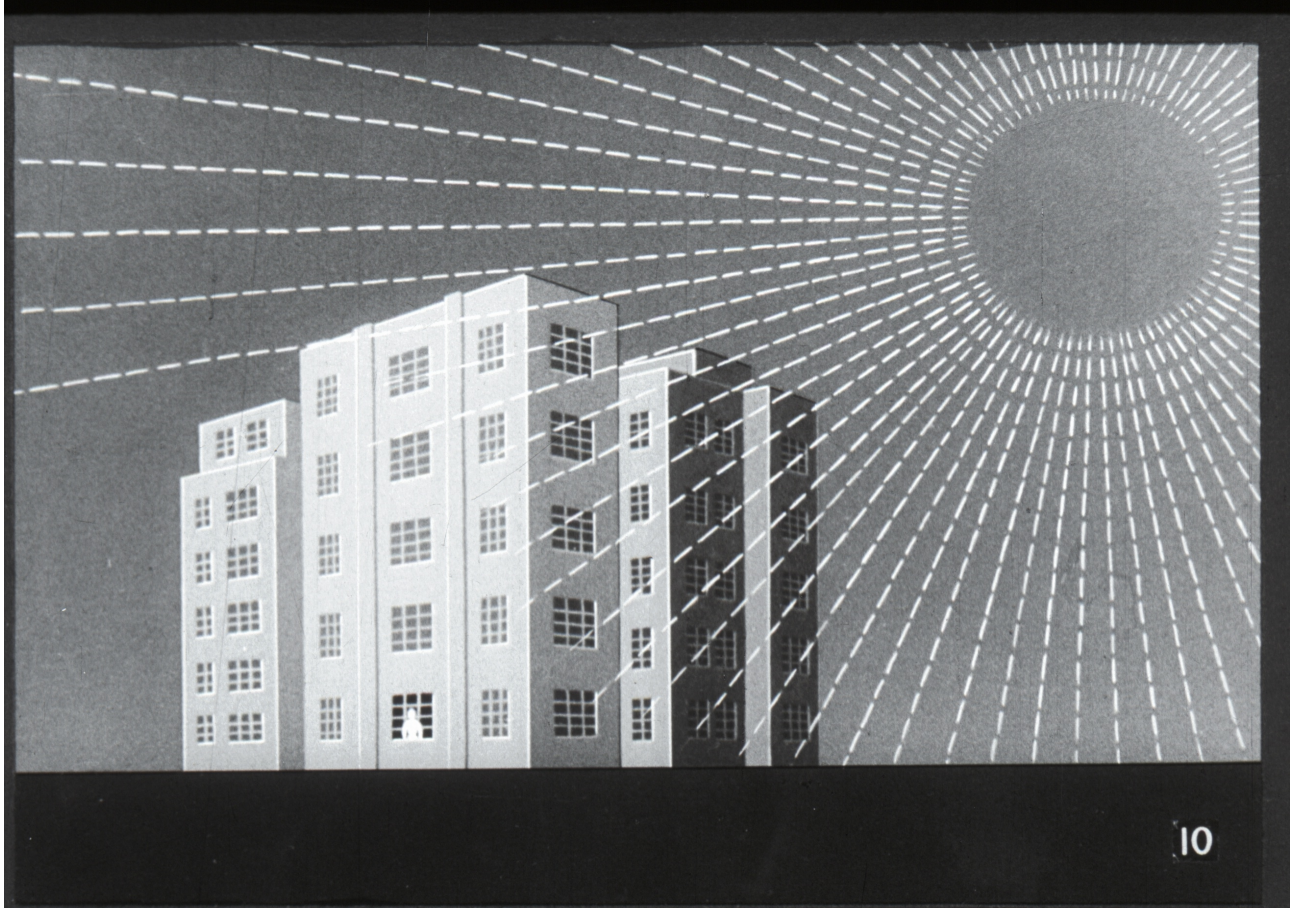

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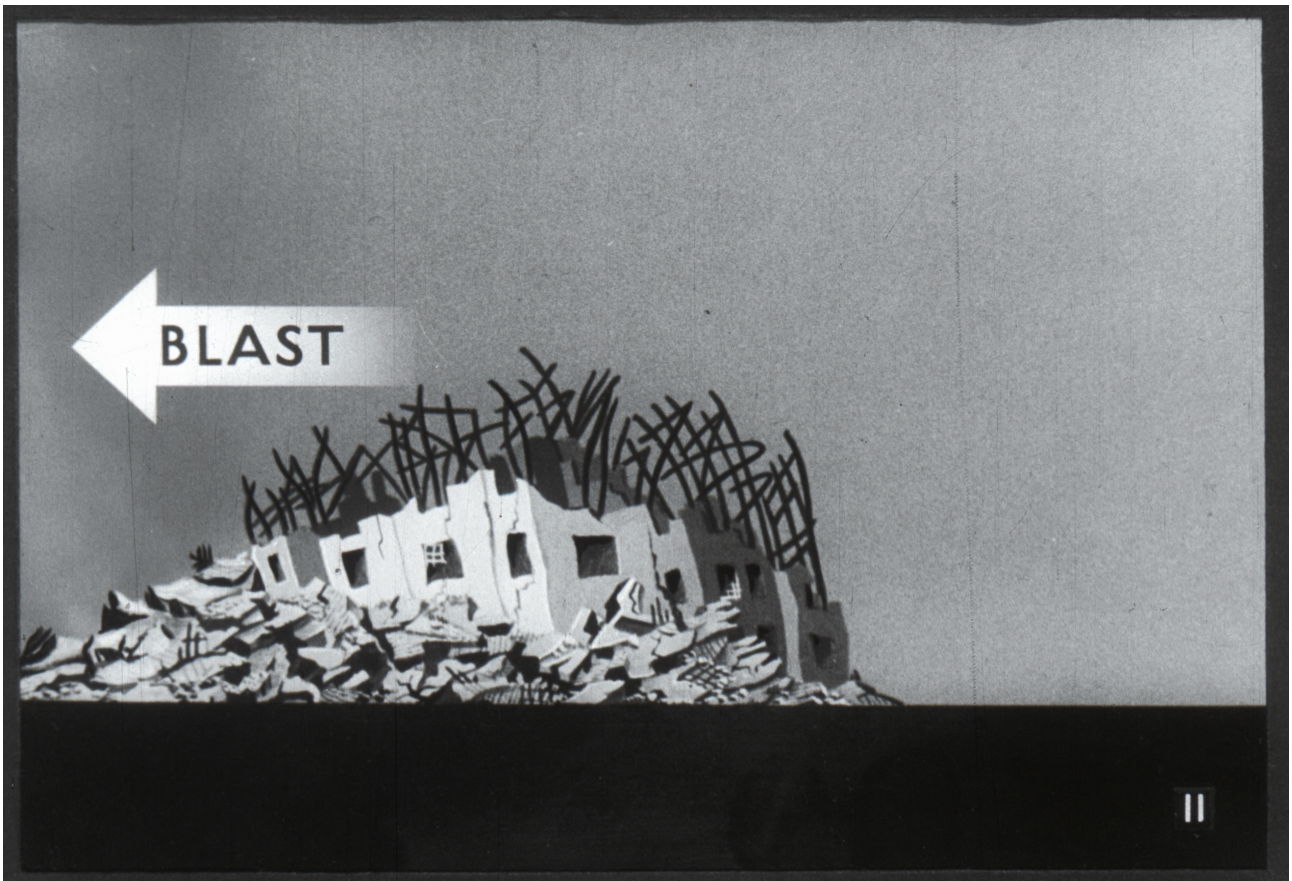
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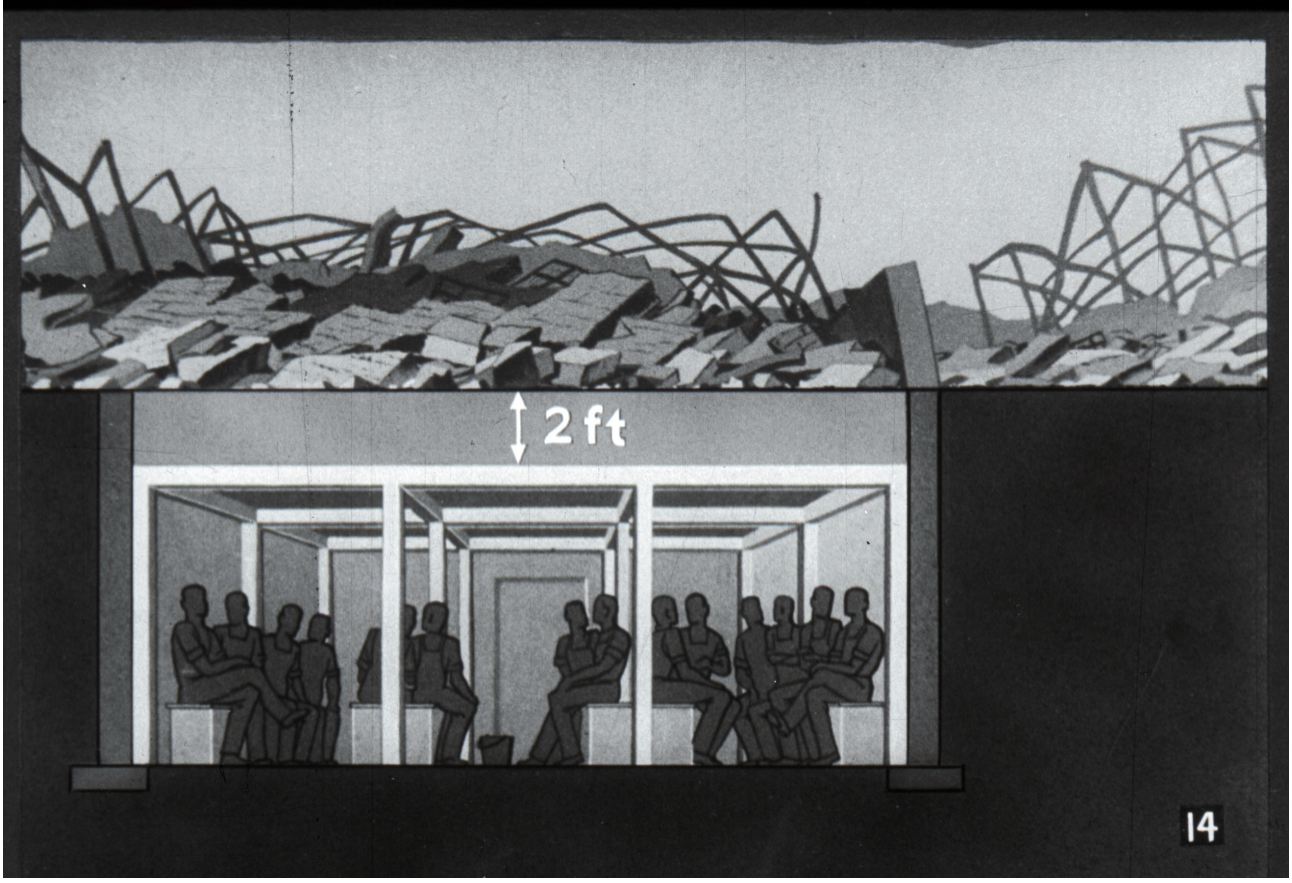
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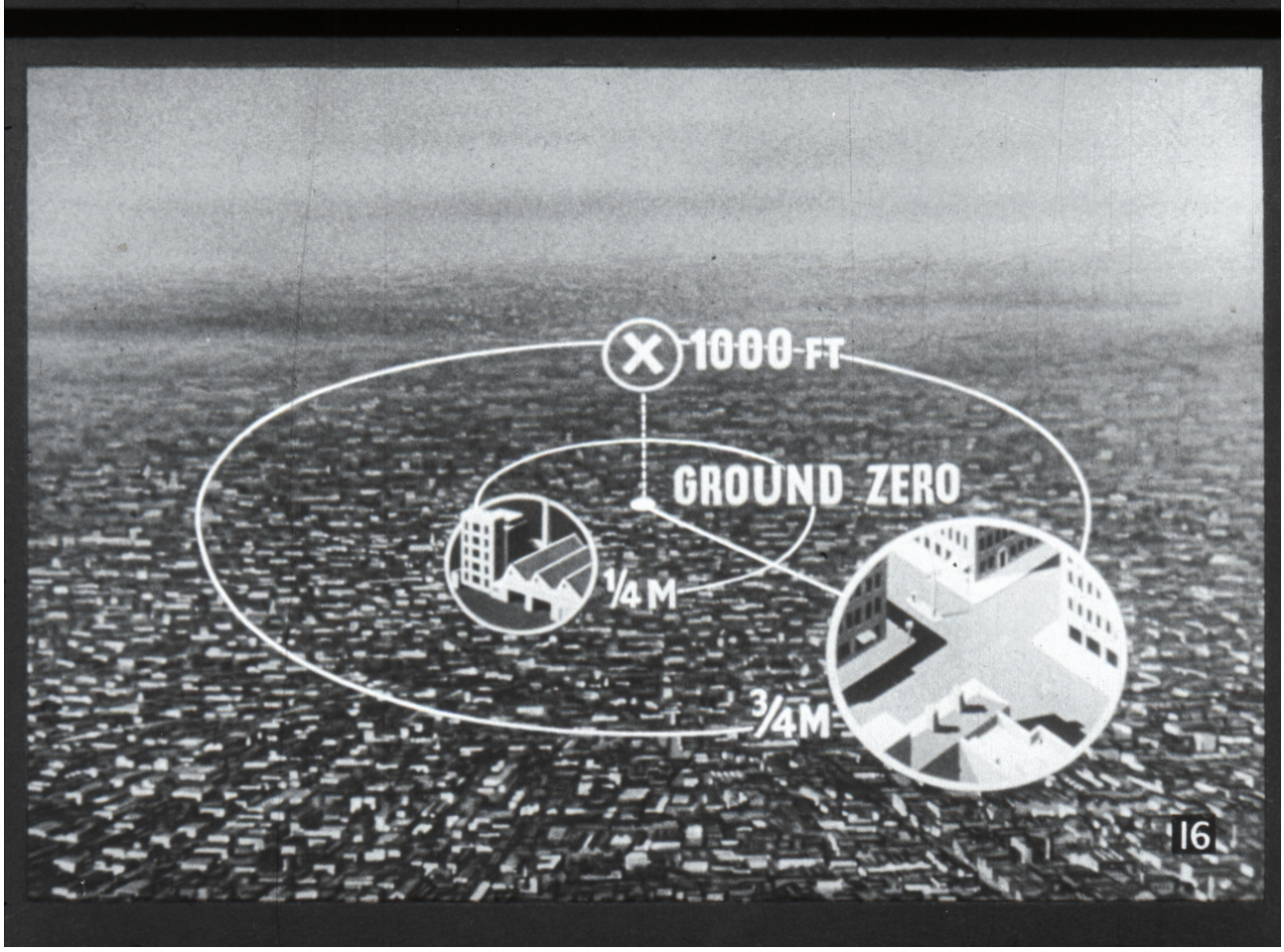

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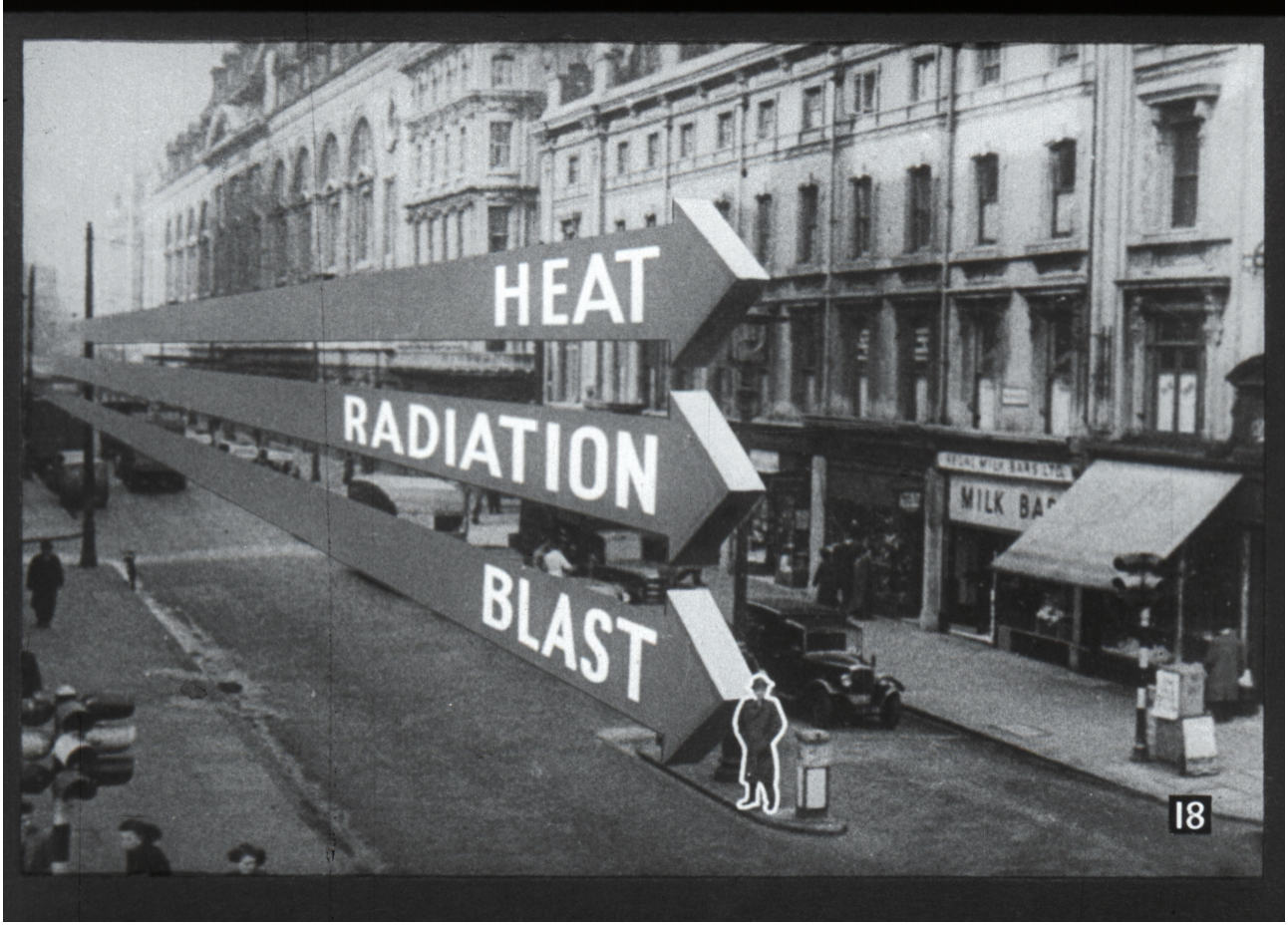
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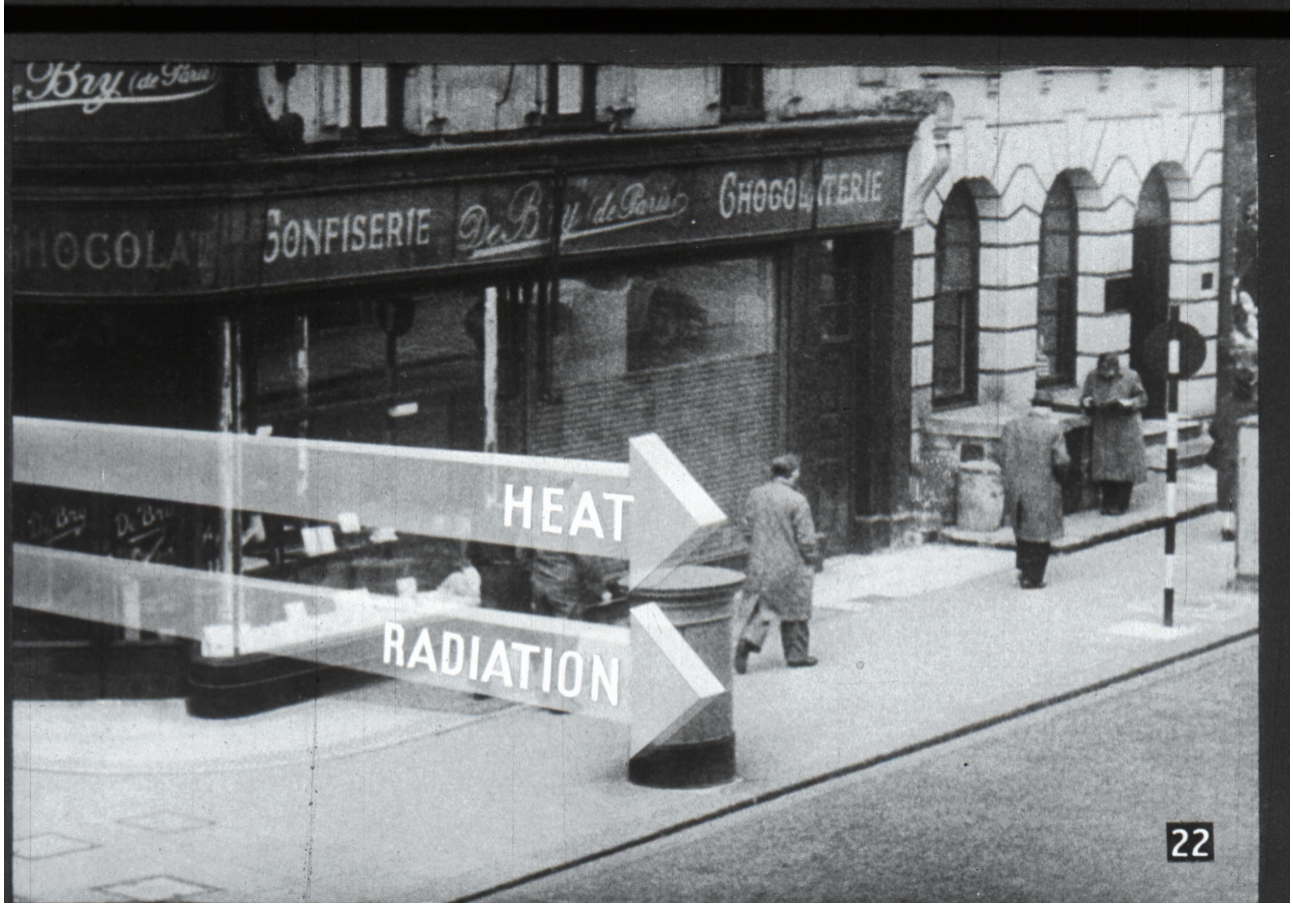
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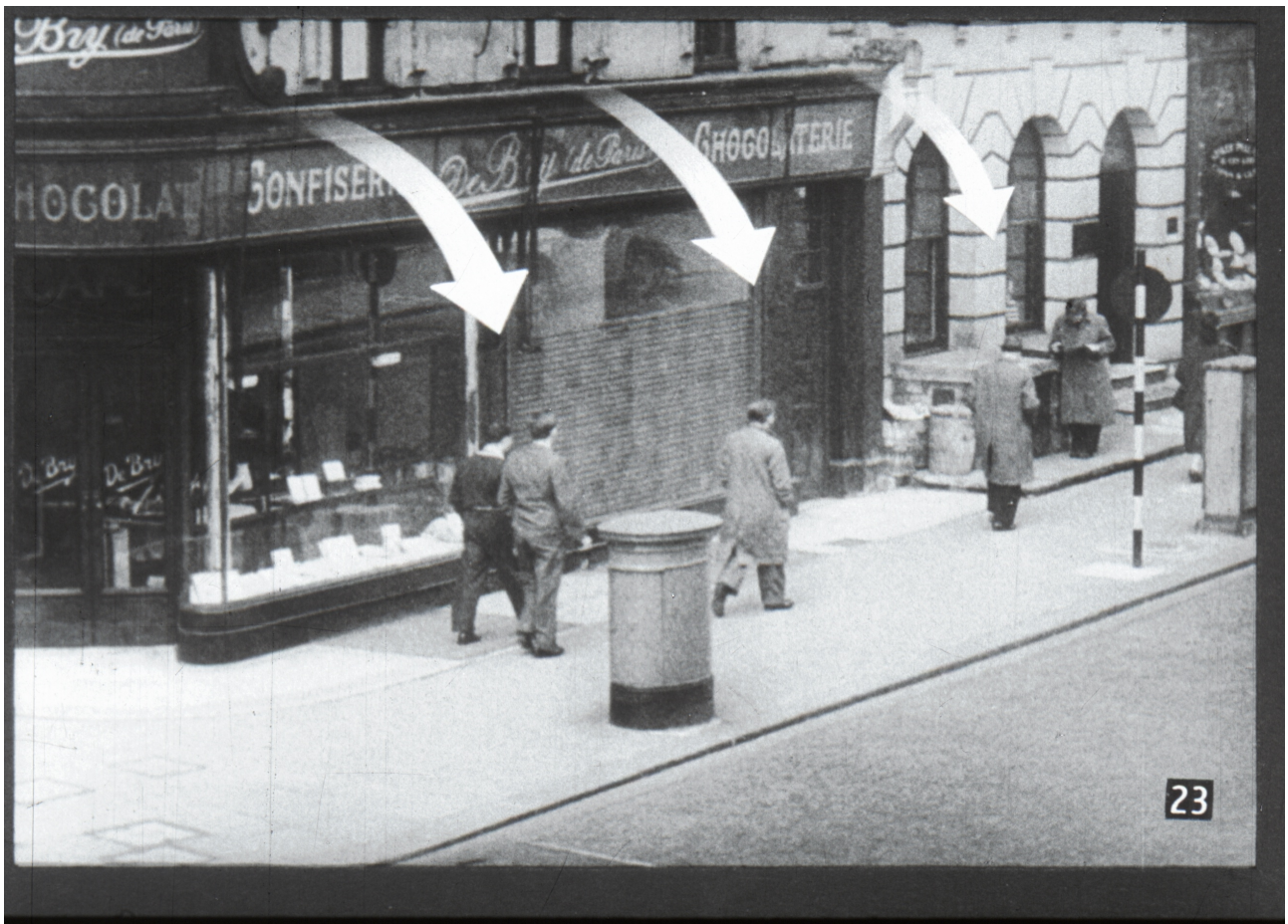
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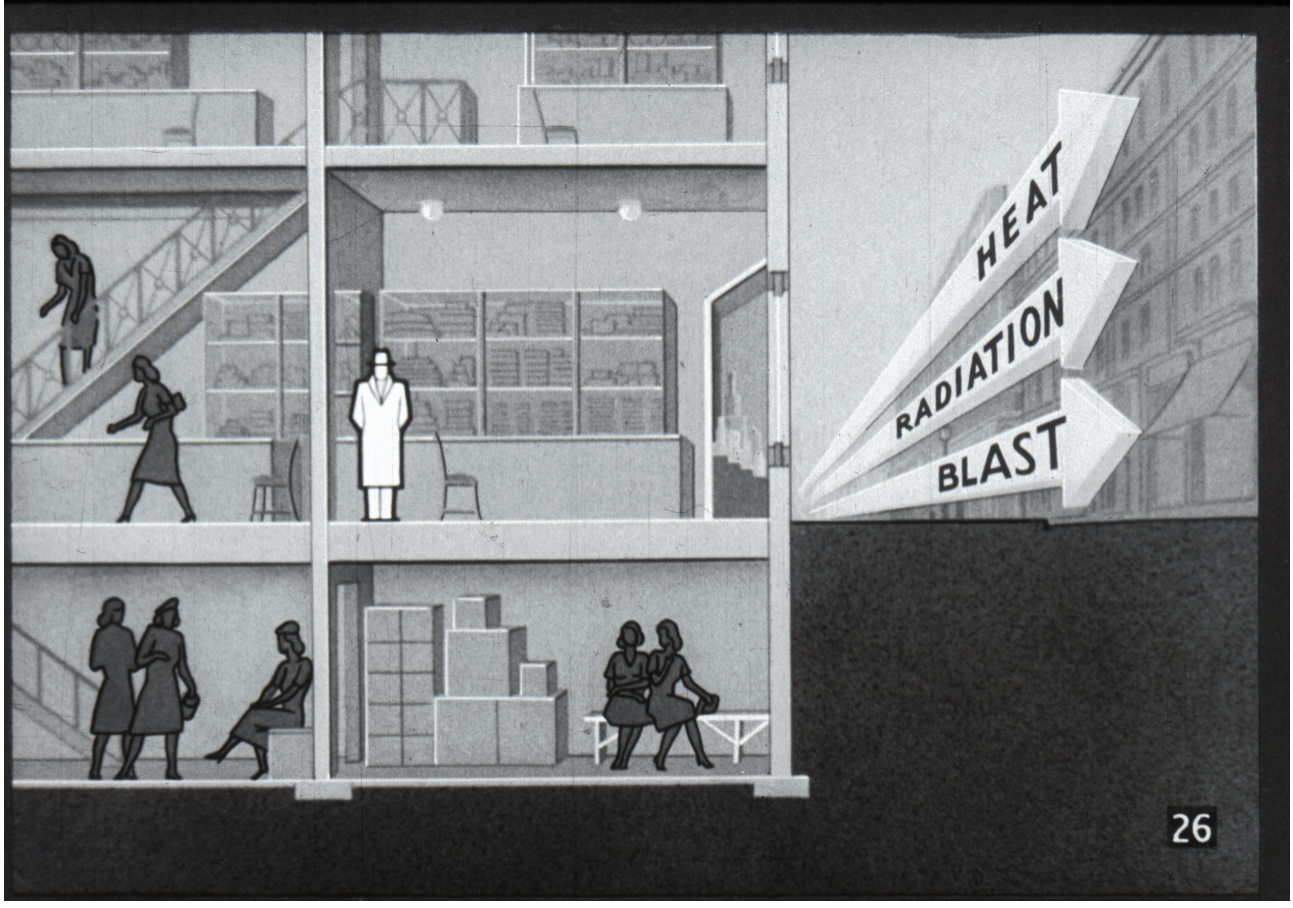
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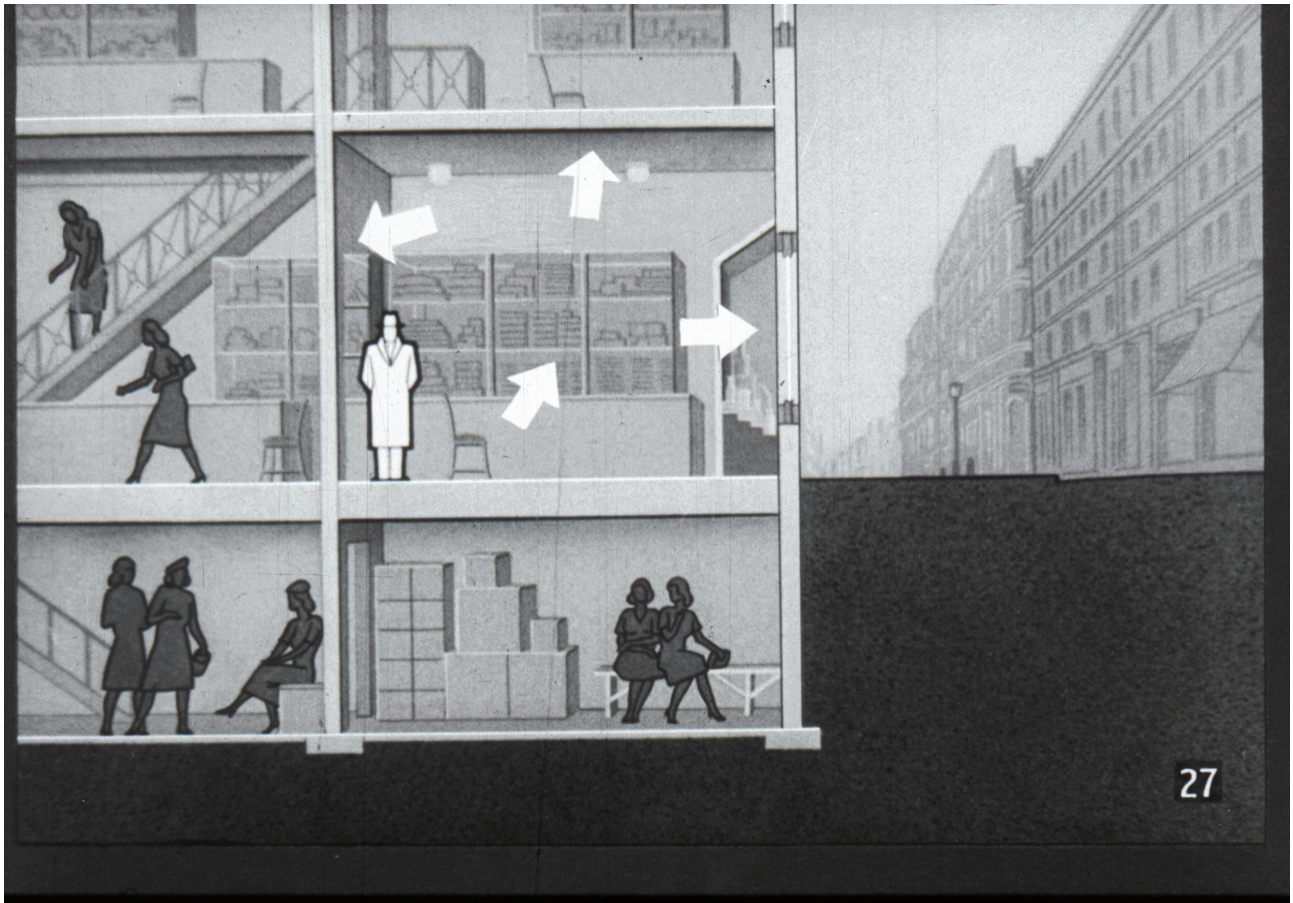
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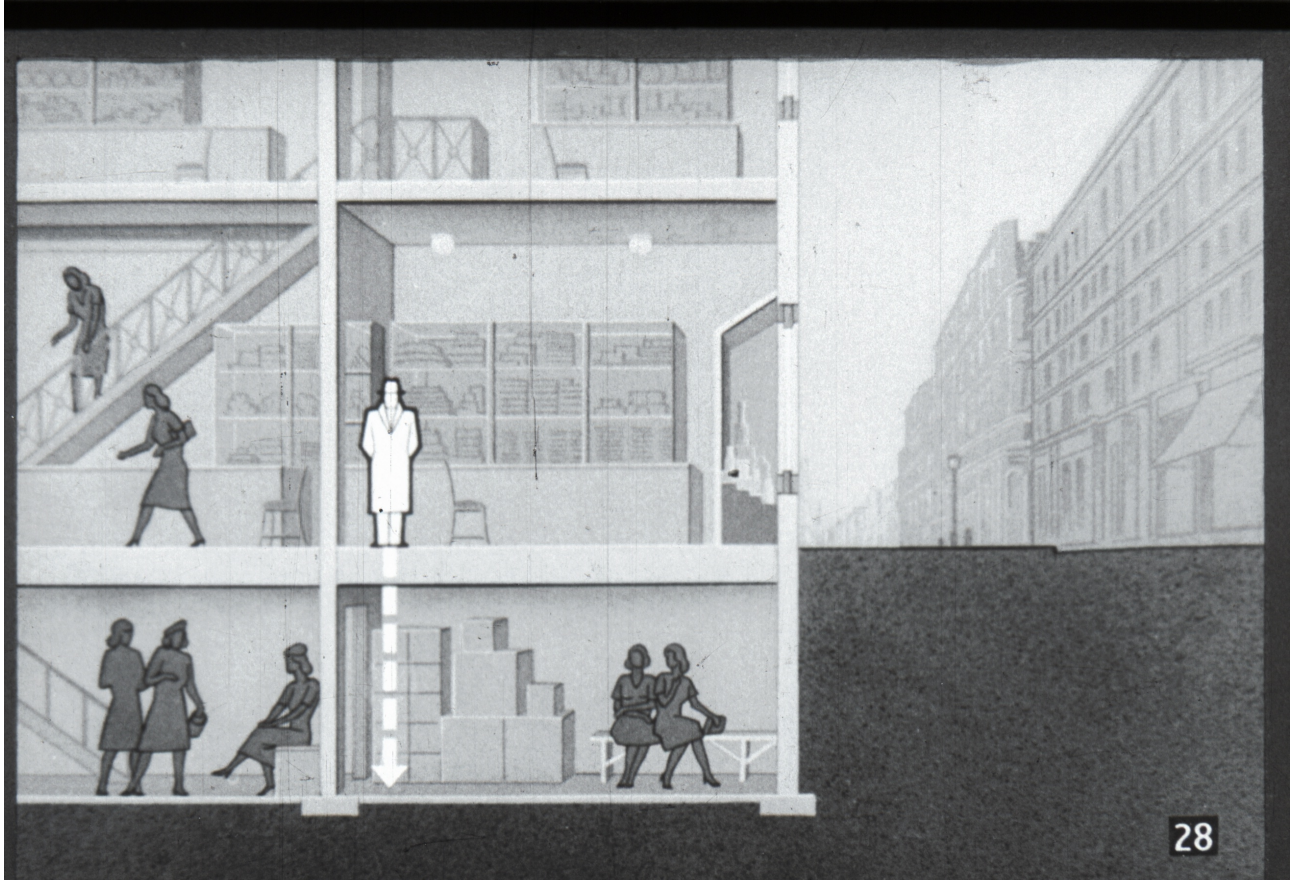
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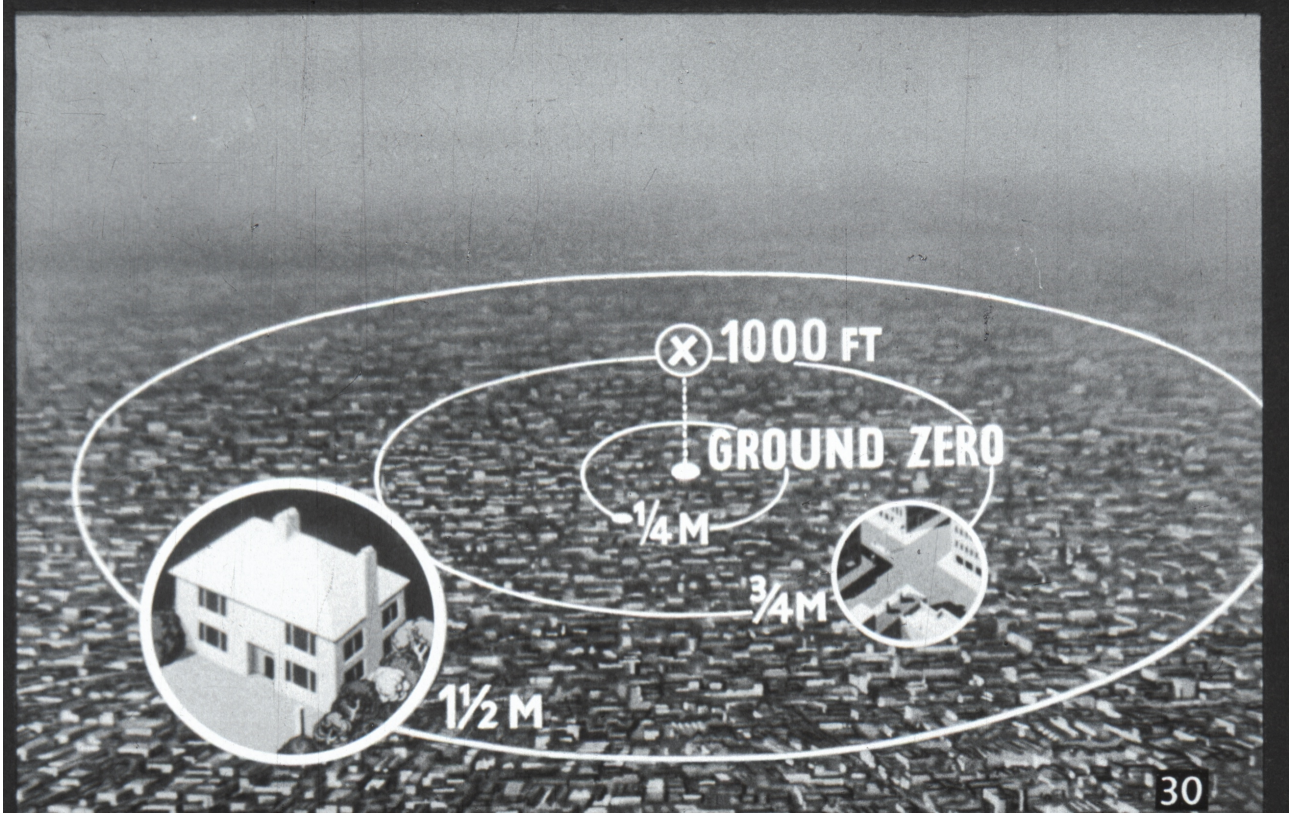

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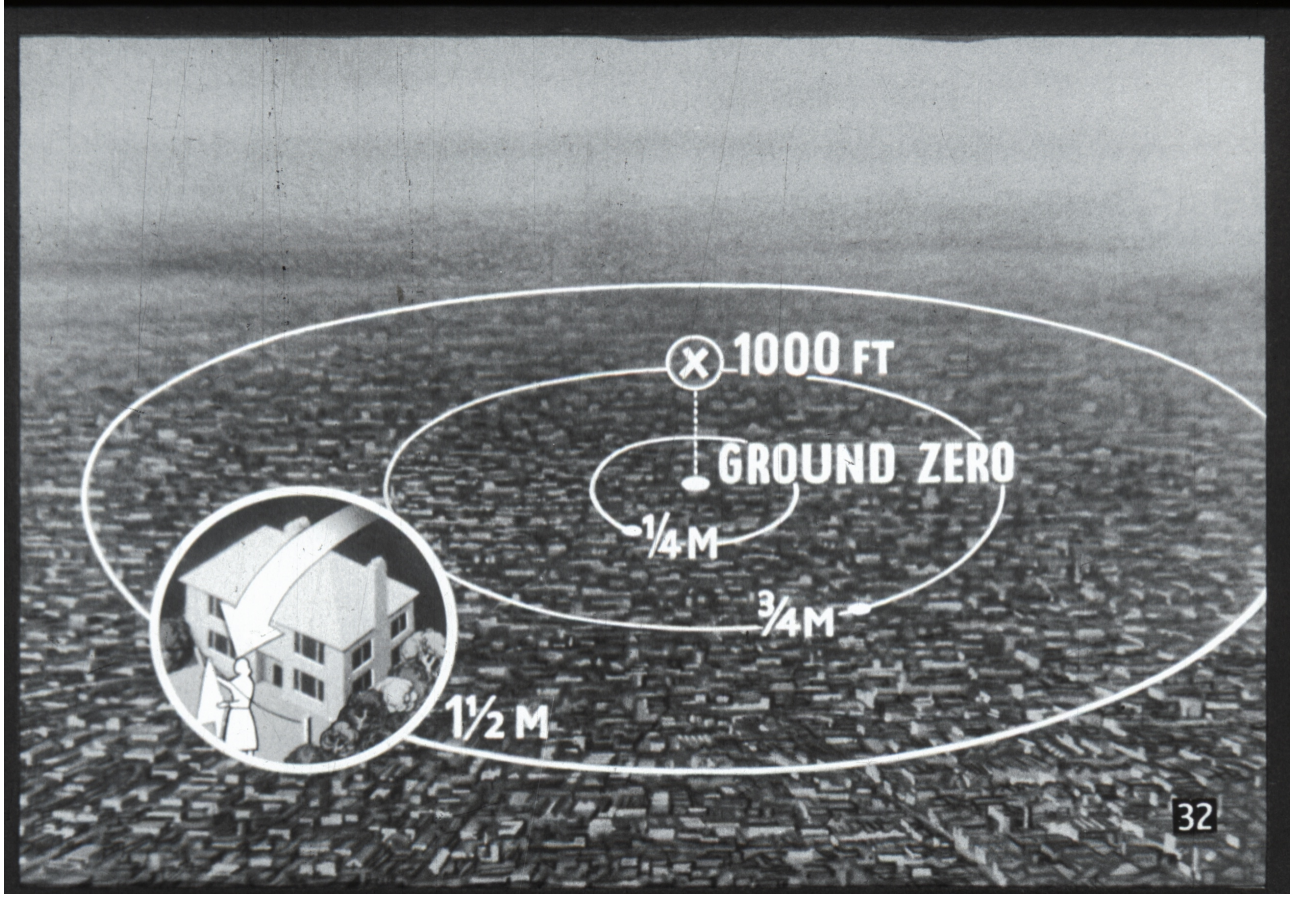
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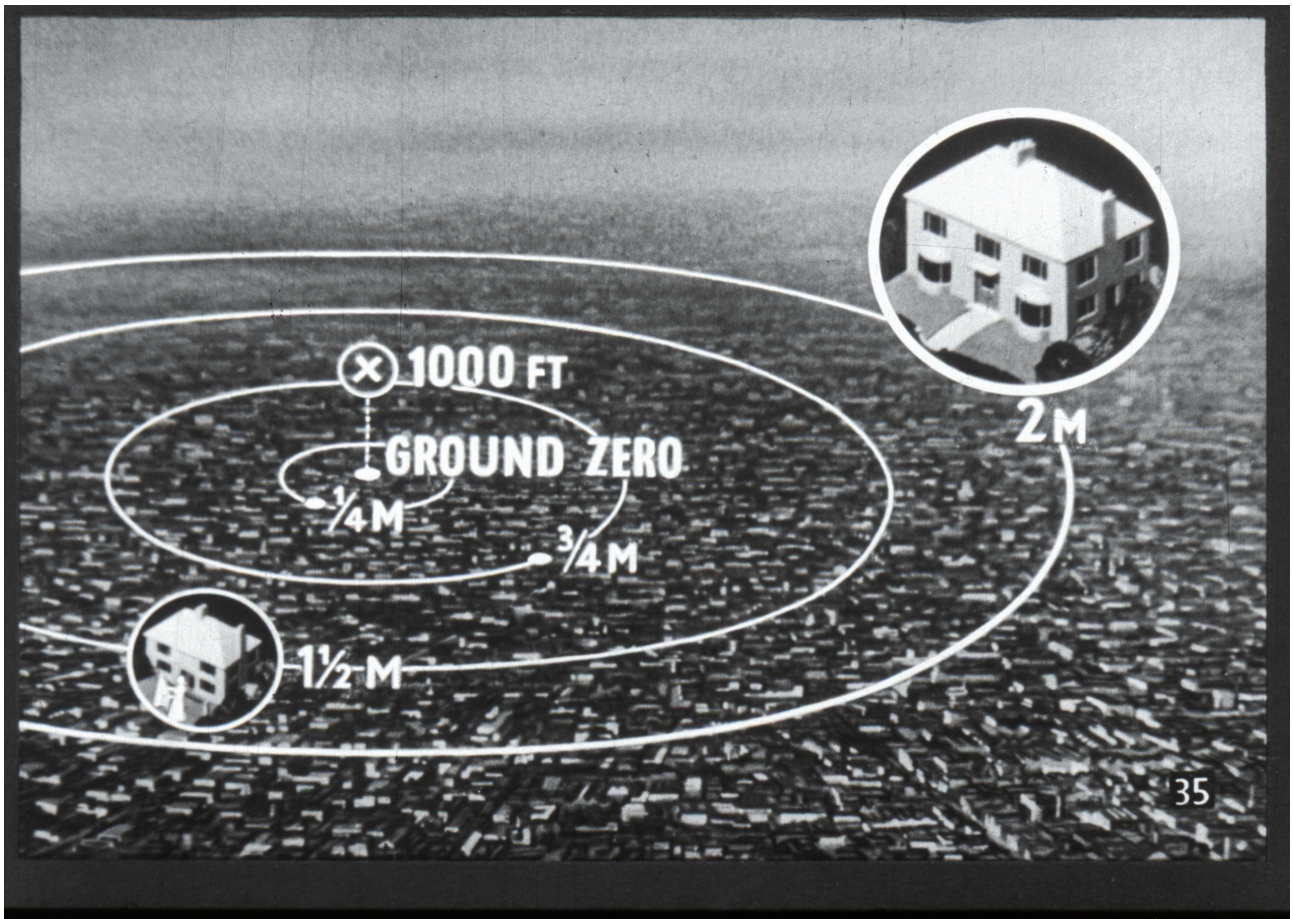
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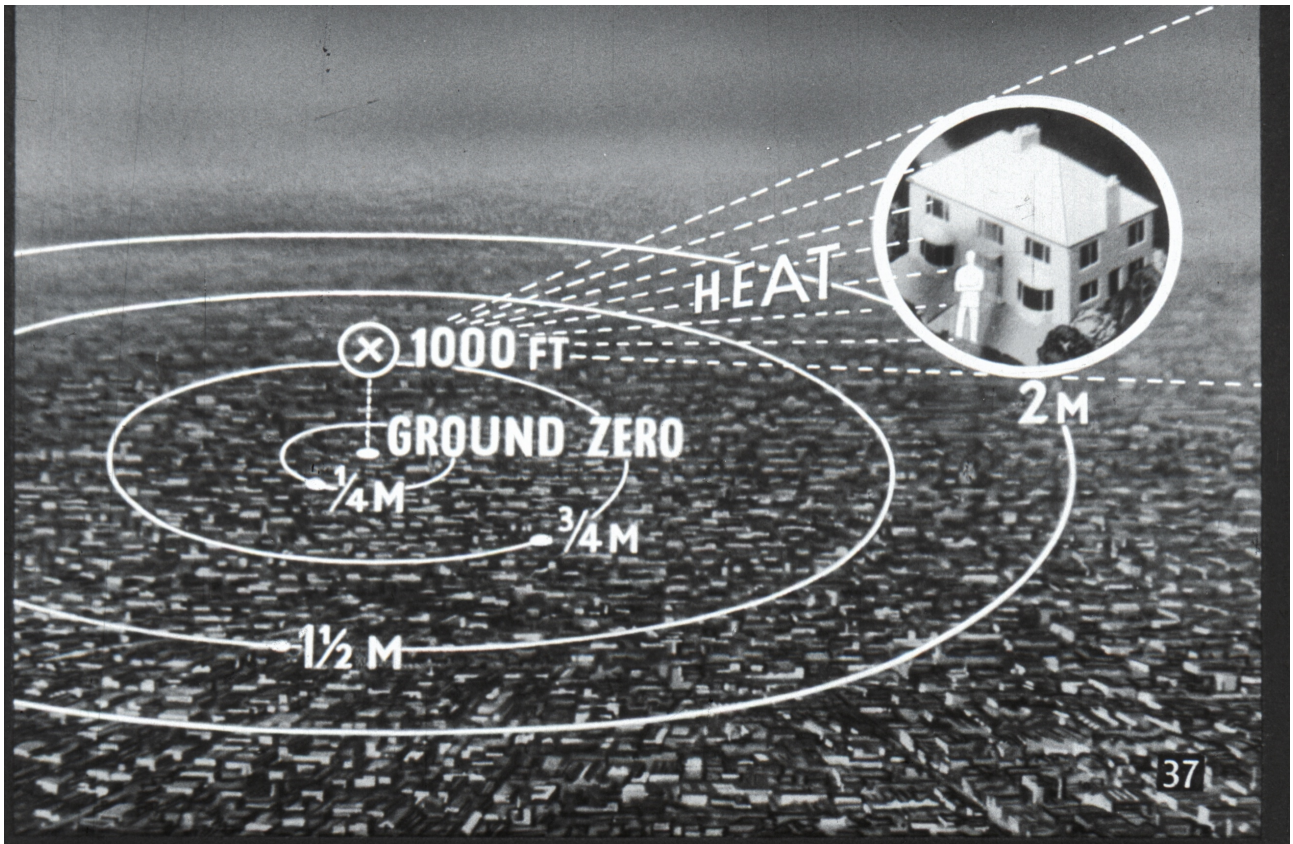
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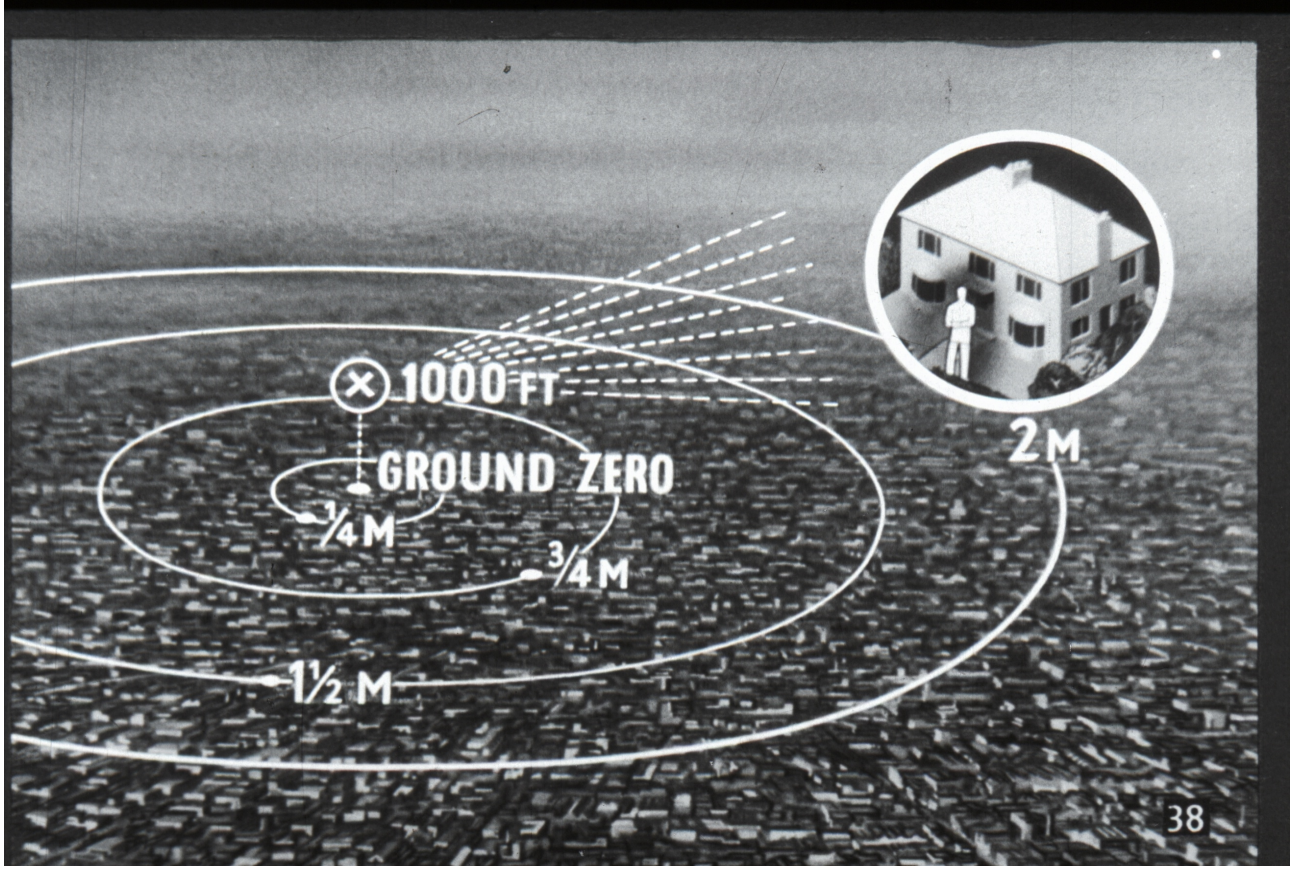
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